

REMARKS

Claims 1-10 were presented for examination, are pending and are rejected.

Reconsideration is respectfully requested.

The 35 U.S.C. § 112 Rejections

Claims 1-10 are rejected as being indefinite.

The Examiner argues that claim 1 is indefinite due to the use of the phrase: "coating is approximately symmetrical"; and that the only support for this term in the specification is found in paragraph 14. The rejection is respectfully traversed.

The term is clearly defined in paragraph 12, which states: "A polarization independent phase coating is achieved by making the internal beam splitting coating of an unpolarized beam splitter to be symmetrical. A symmetric coating, for purposes of this application, is achieved when the coating structure looks the same to a beam propagating through it from either the front side or from rear side. For instance, in Equation (2.1) and (2.2), the phase difference of the two interference beams at the bottom arm does not depend on the polarization when the phase of the reflected beam incident with the front side is equal to that a beam incident with the rear side. A symmetrical coating will produce the phase matching condition, $\Psi_{SR} - \Psi_{SR'} = \Psi_{PR} - \Psi_{PR'}$ = 0." Further clarification is found in paragraph 25. Claim 1 has been amended accordingly to clarify the phrase. Therefore the rejection of claim 1 should be withdrawn.

Claims 2, 6 and 10 are rejected because the phase terms are not defined. These claims have been amended to define the terms, as disclosed in the specification. Therefore the rejection should be withdrawn.

The 35 U.S.C. § 102 Rejections

Claims 1, 3-5 and 7-9 are rejected as being anticipated by Fye. The rejection is respectfully traversed.

The beamsplitter of the reference is configured as a demultiplexer. Beam splitters can separate an incident beam of light in different ways, such as equal power splitting or wavelength splitting. In an interleaver, the beam splitter splits the power of the incident beam evenly into two beams regardless of the wavelength and polarization of the incident beam and maintains the difference of the phase regardless of the polarization. Such a beamsplitter does not transmit one wavelength while reflecting the other wavelength. This is in contrast to the three-material dichroic coating of the reference, which achieves a small separation in wavelength between optical channels (see Column 6, line 16-22).

The demux function of the device described in the reference is accomplished by the BS alone without involving any interference of the separated beams. In the reference, the separated beams do not interfere, because the light of different wavelengths cannot interfere. On the other hand, the demux function of an interleaver comes from the interference of first and second beams, when those two beams are reflected by the mirror in each arm, respectively.

Moreover, the reference does not teach phase maintenance as recited in the applicants' independent claims. Phase difference is meaningful when the two beams interfere with each other. The phase or phase difference is not an issue in the reference, because his application simply deals with beams that each have a different wavelength.

Therefore the rejection should be withdrawn.

Conclusions

It is submitted that this application is in condition for allowance based on claims 1-11 in view of the amendments thereto and the foregoing comments.

If any impediments remain to prompt allowance of the case, please contact the undersigned at 808-875-0012.

Respectfully submitted,



John P. Wooldridge
Attorney for Applicant
Registration No. 38,725

Dated: December 27, 2005